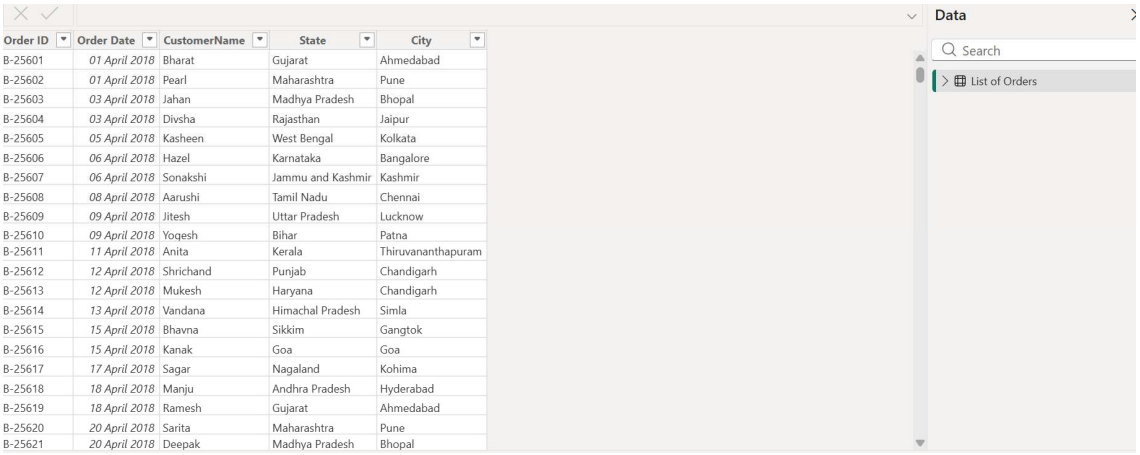
Power BI Assignment 1 – Data Transformation & Data Modeling

1.Import “List of Orders.csv” into Power BI.



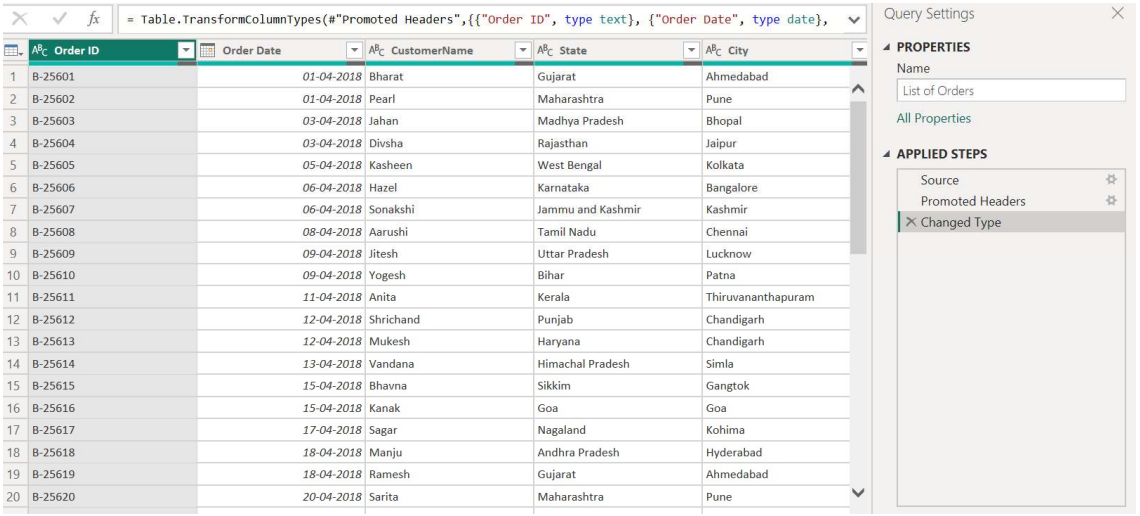
Order ID	Order Date	CustomerName	State	City
B-25601	01 April 2018	Bharat	Gujarat	Ahmedabad
B-25602	01 April 2018	Pearl	Maharashtra	Pune
B-25603	03 April 2018	Jahan	Madhya Pradesh	Bhopal
B-25604	03 April 2018	Divsha	Rajasthan	Jaipur
B-25605	05 April 2018	Kasheen	West Bengal	Kolkata
B-25606	06 April 2018	Hazel	Karnataka	Bangalore
B-25607	06 April 2018	Sonakshi	Jammu and Kashmir	Kashmir
B-25608	08 April 2018	Aarushi	Tamil Nadu	Chennai
B-25609	09 April 2018	Jitesh	Uttar Pradesh	Lucknow
B-25610	09 April 2018	Yogesh	Bihar	Patna
B-25611	11 April 2018	Anita	Kerala	Thiruvananthapuram
B-25612	12 April 2018	Shrichand	Punjab	Chandigarh
B-25613	12 April 2018	Mukesh	Haryana	Chandigarh
B-25614	13 April 2018	Vandana	Himachal Pradesh	Simla
B-25615	15 April 2018	Bhavna	Sikkim	Gangtok
B-25616	15 April 2018	Kanak	Goa	Goa
B-25617	17 April 2018	Sagar	Nagaland	Kohima
B-25618	18 April 2018	Manju	Andhra Pradesh	Hyderabad
B-25619	18 April 2018	Ramesh	Gujarat	Ahmedabad
B-25620	20 April 2018	Sarita	Maharashtra	Pune
B-25621	20 April 2018	Deepak	Madhya Pradesh	Bhopal

Data

Search

List of Orders

2. Open “List of Orders” in Power Query Editor by clicking on ‘Transform’.



```
= Table.TransformColumnTypes(#"Promoted Headers",{{"Order ID", type text}, {"Order Date", type date},
```

	Order ID	Order Date	CustomerName	State	City
1	B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
2	B-25602	01-04-2018	Pearl	Maharashtra	Pune
3	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
4	B-25604	03-04-2018	Divsha	Rajasthan	Jaipur
5	B-25605	05-04-2018	Kasheen	West Bengal	Kolkata
6	B-25606	06-04-2018	Hazel	Karnataka	Bangalore
7	B-25607	06-04-2018	Sonakshi	Jammu and Kashmir	Kashmir
8	B-25608	08-04-2018	Aarushi	Tamil Nadu	Chennai
9	B-25609	09-04-2018	Jitesh	Uttar Pradesh	Lucknow
10	B-25610	09-04-2018	Yogesh	Bihar	Patna
11	B-25611	11-04-2018	Anita	Kerala	Thiruvananthapuram
12	B-25612	12-04-2018	Shrichand	Punjab	Chandigarh
13	B-25613	12-04-2018	Mukesh	Haryana	Chandigarh
14	B-25614	13-04-2018	Vandana	Himachal Pradesh	Simla
15	B-25615	15-04-2018	Bhavna	Sikkim	Gangtok
16	B-25616	15-04-2018	Kanak	Goa	Goa
17	B-25617	17-04-2018	Sagar	Nagaland	Kohima
18	B-25618	18-04-2018	Manju	Andhra Pradesh	Hyderabad
19	B-25619	18-04-2018	Ramesh	Gujarat	Ahmedabad
20	B-25620	20-04-2018	Sarita	Maharashtra	Pune

Query Settings

PROPERTIES

Name

List of Orders

All Properties

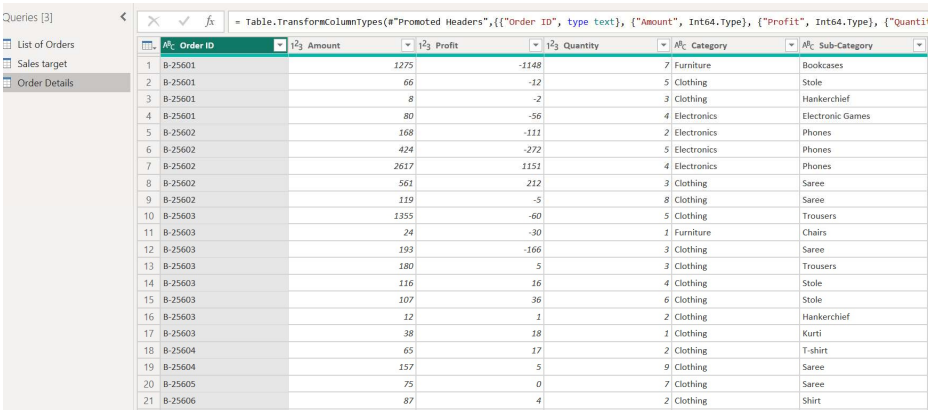
APPLIED STEPS

Source

Promoted Headers

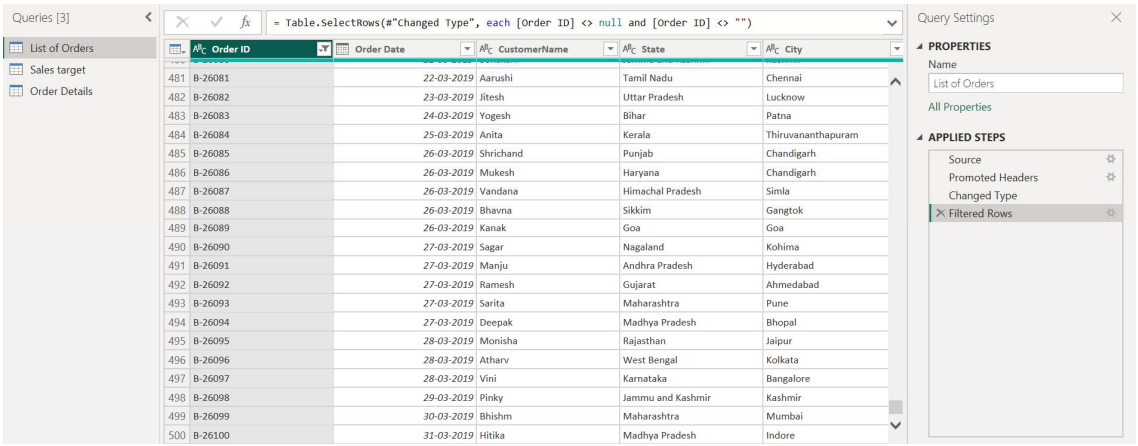
Changed Type

3. Import “Order Details.csv” and “Sales target.csv” into Power Query Editor.



	Order ID	Amount	Profit	Quantity	Category	Sub-Category
1	B-25601	1275	-1148	7	Furniture	Bookcases
2	B-25601	66	-12	5	Clothing	Stole
3	B-25601	8	-2	3	Clothing	Hankerchief
4	B-25601	80	-56	4	Electronics	Electronic Games
5	B-25602	168	-111	2	Electronics	Phones
6	B-25602	424	-272	5	Electronics	Phones
7	B-25602	2617	1151	4	Electronics	Phones
8	B-25602	561	212	3	Clothing	Saree
9	B-25602	119	-5	8	Clothing	Saree
10	B-25603	1355	-60	5	Clothing	Trousers
11	B-25603	24	-30	1	Furniture	Chairs
12	B-25603	193	-166	3	Clothing	Saree
13	B-25603	180	5	3	Clothing	Trousers
14	B-25603	116	16	4	Clothing	Stole
15	B-25603	107	36	6	Clothing	Stole
16	B-25603	12	1	2	Clothing	Hankerchief
17	B-25603	38	18	1	Clothing	Kurti
18	B-25604	65	17	2	Clothing	T-shirt
19	B-25604	157	5	9	Clothing	Saree
20	B-25605	75	0	7	Clothing	Saree
21	B-25606	87	4	2	Clothing	Shirt

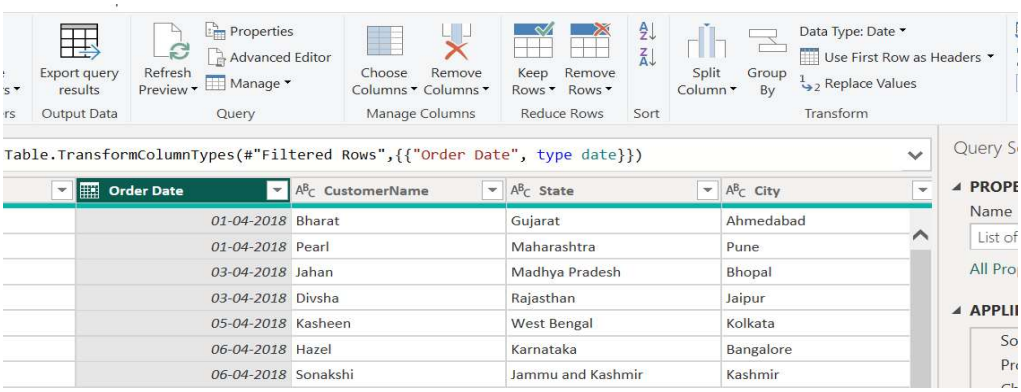
4.Restrict the "List of Orders" table to only the first 500 rows.



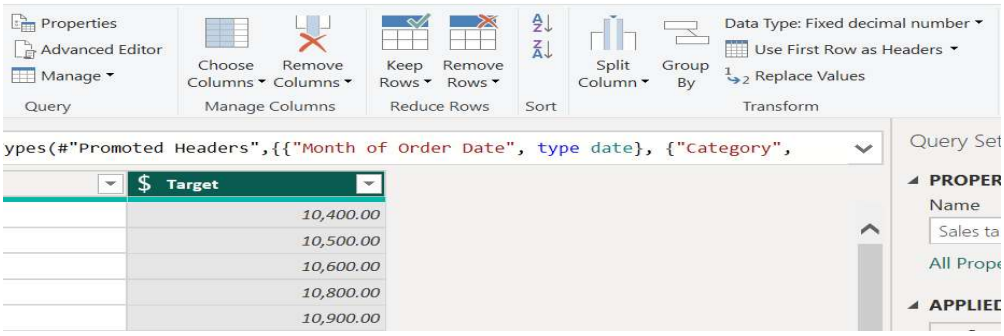
	Order ID	Order Date	CustomerName	State	City
481	B-26081	22-03-2019	Aarushi	Tamil Nadu	Chennai
482	B-26082	23-03-2019	Jitesh	Uttar Pradesh	Lucknow
483	B-26083	24-03-2019	Yogesh	Bihar	Patna
484	B-26084	25-03-2019	Anita	Kerala	Thiruvananthapuram
485	B-26085	26-03-2019	Shrichand	Punjab	Chandigarh
486	B-26086	26-03-2019	Mukesh	Haryana	Chandigarh
487	B-26087	26-03-2019	Vandana	Himachal Pradesh	Simla
488	B-26088	26-03-2019	Bhavna	Sikkim	Gangtok
489	B-26089	26-03-2019	Kanak	Goa	Goa
490	B-26090	27-03-2019	Sagar	Nagaland	Kohima
491	B-26091	27-03-2019	Manju	Andhra Pradesh	Hyderabad
492	B-26092	27-03-2019	Ramesh	Gujarat	Ahmedabad
493	B-26093	27-03-2019	Sarita	Maharashtra	Pune
494	B-26094	27-03-2019	Deepak	Madhya Pradesh	Bhopal
495	B-26095	28-03-2019	Monisha	Rajasthan	Jaipur
496	B-26096	28-03-2019	Atharv	West Bengal	Kolkata
497	B-26097	28-03-2019	Vini	Karnataka	Bangalore
498	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir
499	B-26099	30-03-2019	Bhishm	Maharashtra	Mumbai
500	B-26100	31-03-2019	Hitika	Madhya Pradesh	Indore

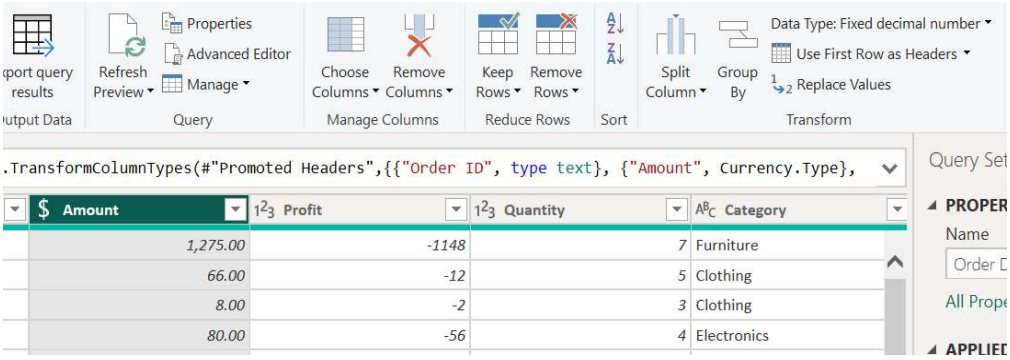
5.Ensure the “Order Date” column in the “List of Orders” table is set to data type 'Date'.

6. Change the data type of “Amount” and “Target” columns to ‘Fixed Decimal Number’.

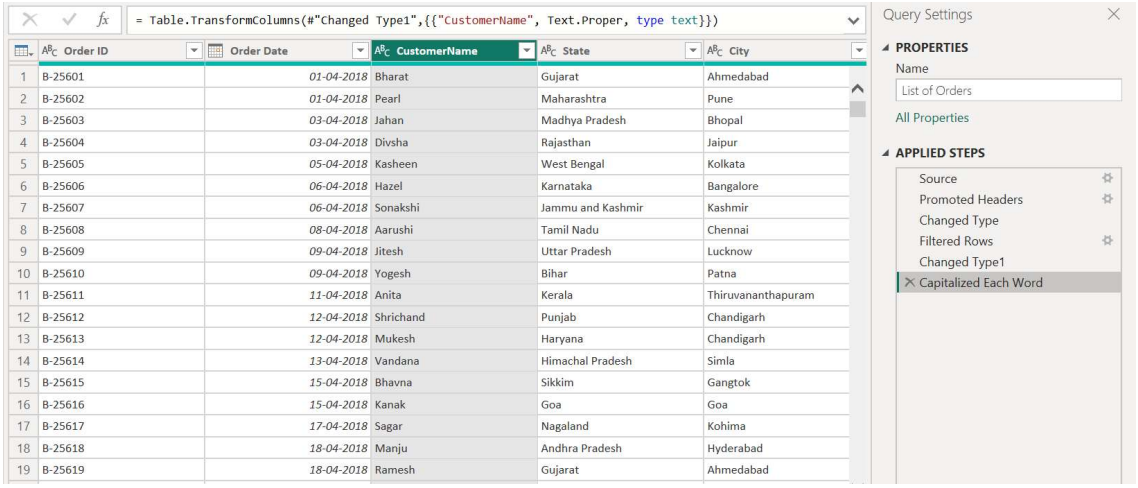


	Order Date	CustomerName	State	City
	01-04-2018	Bharat	Gujarat	Ahmedabad
	01-04-2018	Pearl	Maharashtra	Pune
	03-04-2018	Jahan	Madhya Pradesh	Bhopal
	03-04-2018	Divsha	Rajasthan	Jaipur
	05-04-2018	Kasheen	West Bengal	Kolkata
	06-04-2018	Hazel	Karnataka	Bangalore
	06-04-2018	Sonakshi	Jammu and Kashmir	Kashmir

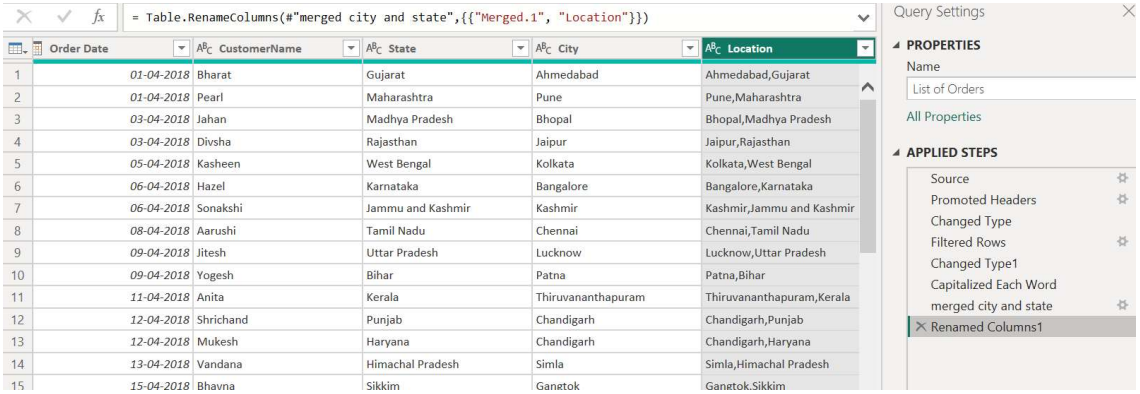




7.Format the "CustomerName" column into proper case, ensuring consistent capitalization for each word.

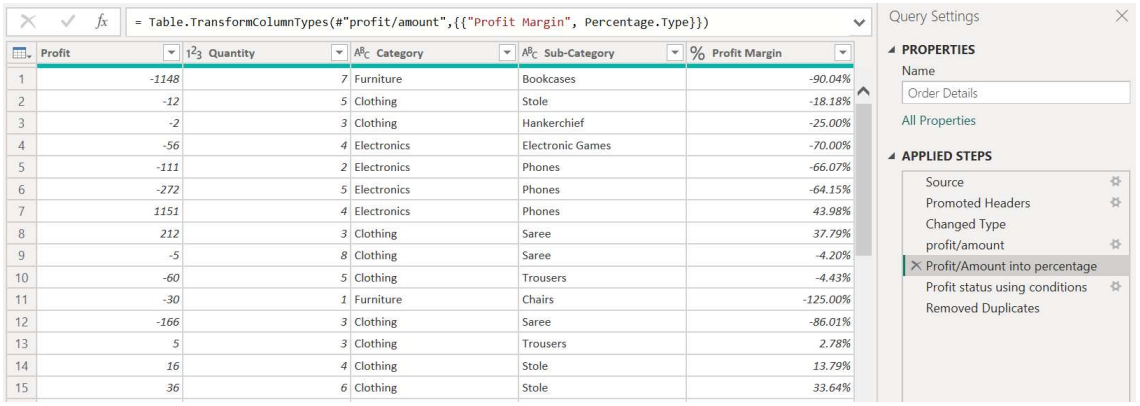


8.Merge the "State" and "City" columns to create a new column named "Location" in the format ‘City, State’.



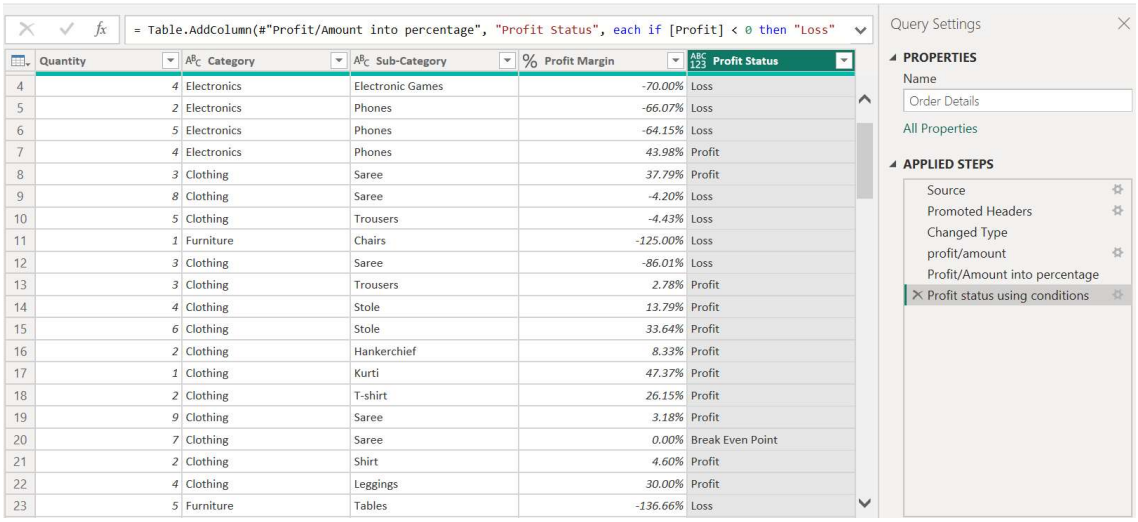
	Order Date	CustomerName	State	City	Location
1	01-04-2018	Bharat	Gujarat	Ahmedabad	Ahmedabad,Gujarat
2	01-04-2018	Pearl	Maharashtra	Pune	Pune,Maharashtra
3	03-04-2018	Jahan	Madhya Pradesh	Bhopal	Bhopal,Madhya Pradesh
4	03-04-2018	Divsha	Rajasthan	Jaipur	Jaipur,Rajasthan
5	05-04-2018	Kasheen	West Bengal	Kolkata	Kolkata,West Bengal
6	06-04-2018	Hazel	Karnataka	Bangalore	Bangalore,Karnataka
7	06-04-2018	Sonakshi	Jammu and Kashmir	Kashmir	Kashmir,Jammu and Kashmir
8	08-04-2018	Aarushi	Tamil Nadu	Chennai	Chennai,Tamil Nadu
9	09-04-2018	Jitesh	Uttar Pradesh	Lucknow	Lucknow,Uttar Pradesh
10	09-04-2018	Yogesh	Bihar	Patna	Patna,Bihar
11	11-04-2018	Anita	Kerala	Thiruvananthapuram	Thiruvananthapuram,Kerala
12	12-04-2018	Shrichand	Punjab	Chandigarh	Chandigarh,Punjab
13	12-04-2018	Mukesh	Haryana	Chandigarh	Chandigarh,Haryana
14	13-04-2018	Vandana	Himachal Pradesh	Simla	Simla,Himachal Pradesh
15	15-04-2018	Bhavna	Sikkim	Gangtok	Gangtok,Sikkim

9.Create a new custom column named "Profit Margin" as the percentage of "Profit" divided by "Amount".



	Profit	Quantity	Category	Sub-Category	Profit Margin
1	-1148	7	Furniture	Bookcases	-90.04%
2	-12	5	Clothing	Stole	-18.18%
3	-2	3	Clothing	Hankerchief	-25.00%
4	-56	4	Electronics	Electronic Games	-70.00%
5	-111	2	Electronics	Phones	-66.07%
6	-272	5	Electronics	Phones	-64.15%
7	1151	4	Electronics	Phones	43.98%
8	212	3	Clothing	Saree	37.79%
9	-5	8	Clothing	Saree	-4.20%
10	-60	5	Clothing	Trousers	-4.43%
11	-30	1	Furniture	Chairs	-125.00%
12	-166	3	Clothing	Saree	-86.01%
13	5	3	Clothing	Trousers	2.78%
14	16	4	Clothing	Stole	13.79%
15	36	6	Clothing	Stole	33.64%

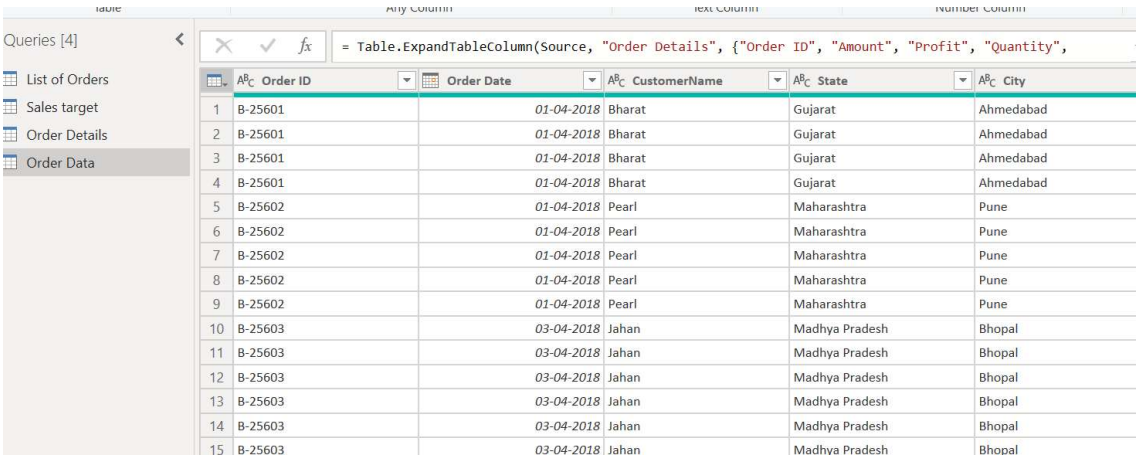
10.Add a new conditional column named "Profit Status" based on the values in the "Profit" column. The conditions are as follows: if the profit is less than 0, the label should be "Loss"; if the profit equals 0, the label should be "Break-Even"; and if the profit is greater than 0, the label should be "Profit".



	Quantity	Category	Sub-Category	Profit Margin	Profit Status
4	4	Electronics	Electronic Games	-70.00%	Loss
5	2	Electronics	Phones	-66.07%	Loss
6	5	Electronics	Phones	-64.15%	Loss
7	4	Electronics	Phones	43.98%	Profit
8	3	Clothing	Saree	37.79%	Profit
9	8	Clothing	Saree	-4.20%	Loss
10	5	Clothing	Trousers	-4.43%	Loss
11	1	Furniture	Chairs	-125.00%	Loss
12	3	Clothing	Saree	-86.01%	Loss
13	3	Clothing	Trousers	2.78%	Profit
14	4	Clothing	Stole	13.79%	Profit
15	6	Clothing	Stole	33.64%	Profit
16	2	Clothing	Hankerchief	8.33%	Profit
17	1	Clothing	Kurti	47.37%	Profit
18	2	Clothing	T-shirt	26.15%	Profit
19	9	Clothing	Saree	3.18%	Profit
20	7	Clothing	Saree	0.00%	Break Even Point
21	2	Clothing	Shirt	4.60%	Profit
22	4	Clothing	Leggings	30.00%	Profit
23	5	Furniture	Tables	-136.66%	Loss

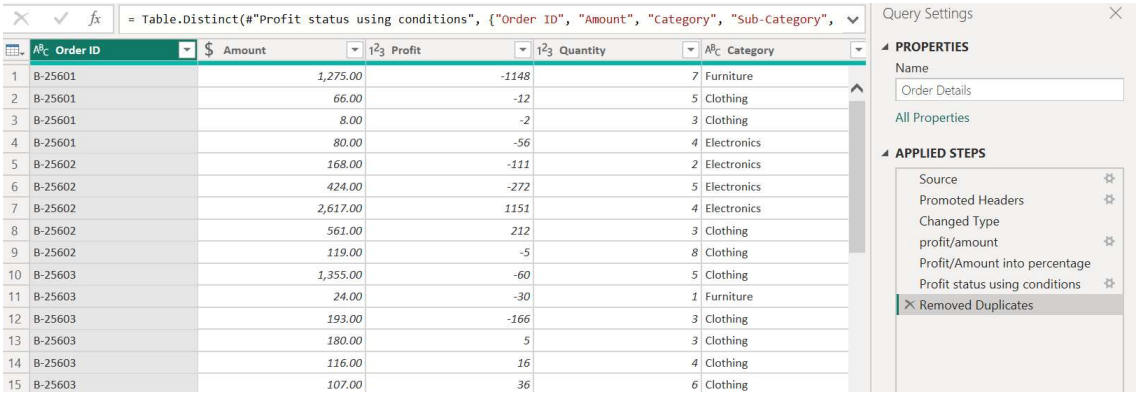
Merging Data (Joins)

Merge the "List of Orders" and "Order Details" tables into a new single table named "Orders Data" based on the "Order ID" relationship.



	Order ID	Order Date	CustomerName	State	City
1	B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
2	B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
3	B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
4	B-25601	01-04-2018	Bharat	Gujarat	Ahmedabad
5	B-25602	01-04-2018	Pearl	Maharashtra	Pune
6	B-25602	01-04-2018	Pearl	Maharashtra	Pune
7	B-25602	01-04-2018	Pearl	Maharashtra	Pune
8	B-25602	01-04-2018	Pearl	Maharashtra	Pune
9	B-25602	01-04-2018	Pearl	Maharashtra	Pune
10	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
11	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
12	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
13	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
14	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal
15	B-25603	03-04-2018	Jahan	Madhya Pradesh	Bhopal

Handling Missing Data & Duplicate Data



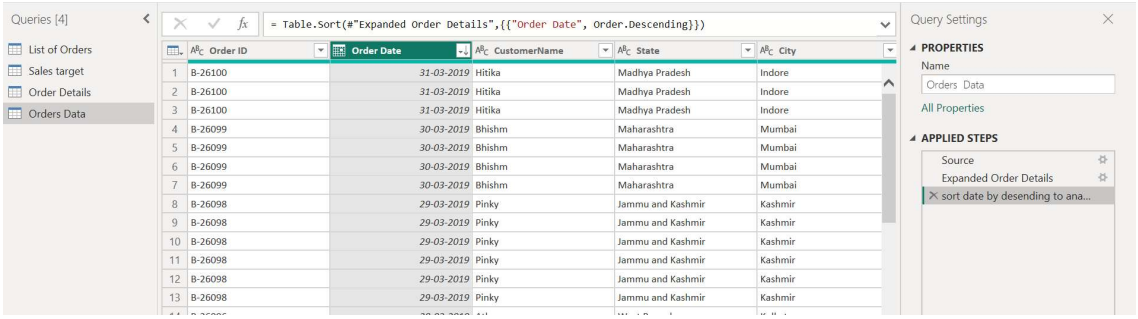
	Order ID	Amount	Profit	Quantity	Category
1	B-25601	1,275.00	-1148	7	Furniture
2	B-25601	66.00	-12	5	Clothing
3	B-25601	8.00	-2	3	Clothing
4	B-25601	80.00	-56	4	Electronics
5	B-25602	168.00	-111	2	Electronics
6	B-25602	424.00	-272	5	Electronics
7	B-25602	2,617.00	1151	4	Electronics
8	B-25602	561.00	212	3	Clothing
9	B-25602	119.00	-5	8	Clothing
10	B-25603	1,355.00	-60	5	Clothing
11	B-25603	24.00	-30	1	Furniture
12	B-25603	193.00	-166	3	Clothing
13	B-25603	180.00	5	3	Clothing
14	B-25603	116.00	16	4	Clothing
15	B-25603	107.00	36	6	Clothing

Observation:

There is no missing and duplicates value.

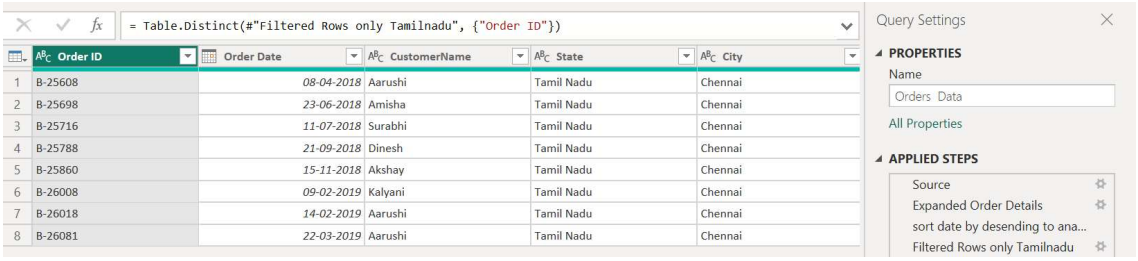
Sorting and Filtering Data

1.Sort the orders by Order Date in descending order to analyze recent trends



	Order ID	Order Date	CustomerName	State	City
1	B-26100	31-03-2019	Hitika	Madhya Pradesh	Indore
2	B-26100	31-03-2019	Hitika	Madhya Pradesh	Indore
3	B-26100	31-03-2019	Hitika	Madhya Pradesh	Indore
4	B-26099	30-03-2019	Bhishm	Maharashtra	Mumbai
5	B-26099	30-03-2019	Bhishm	Maharashtra	Mumbai
6	B-26099	30-03-2019	Bhishm	Maharashtra	Mumbai
7	B-26099	30-03-2019	Bhishm	Maharashtra	Mumbai
8	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir
9	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir
10	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir
11	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir
12	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir
13	B-26098	29-03-2019	Pinky	Jammu and Kashmir	Kashmir

2.Filter the orders to focus only on a specific state (e.g., Tamil Nadu) for regional analysis

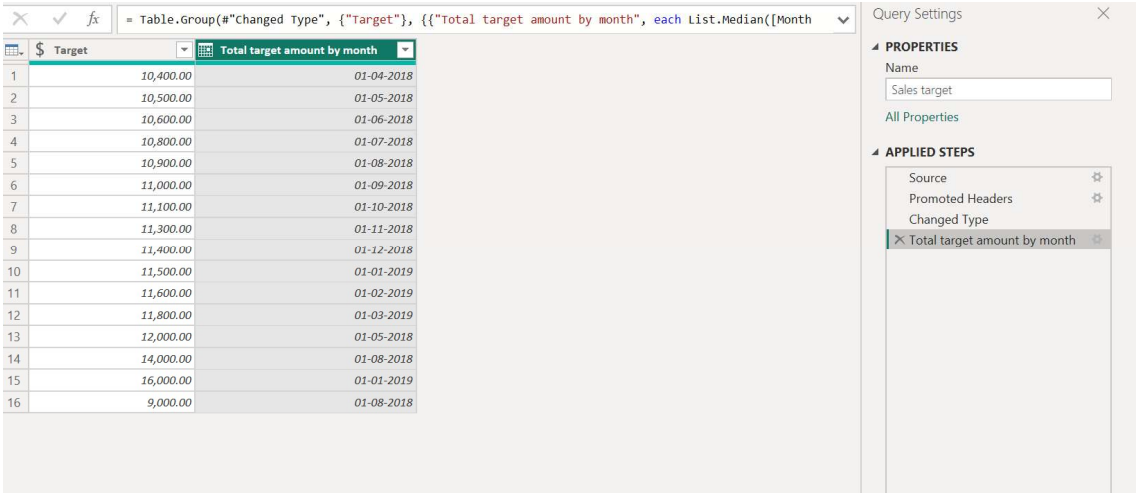


	Order ID	Order Date	CustomerName	State	City
1	B-25608	08-04-2018	Aarushi	Tamil Nadu	Chennai
2	B-25698	23-06-2018	Amisha	Tamil Nadu	Chennai
3	B-25716	11-07-2018	Surabhi	Tamil Nadu	Chennai
4	B-25788	21-09-2018	Dinesh	Tamil Nadu	Chennai
5	B-25860	15-11-2018	Akshay	Tamil Nadu	Chennai
6	B-26008	09-02-2019	Kalyani	Tamil Nadu	Chennai
7	B-26018	14-02-2019	Aarushi	Tamil Nadu	Chennai
8	B-26081	22-03-2019	Aarushi	Tamil Nadu	Chennai

Grouping and Aggregating Data

1.Duplicate the “Order Details” table and calculate the count of each Order ID, average profit by Category

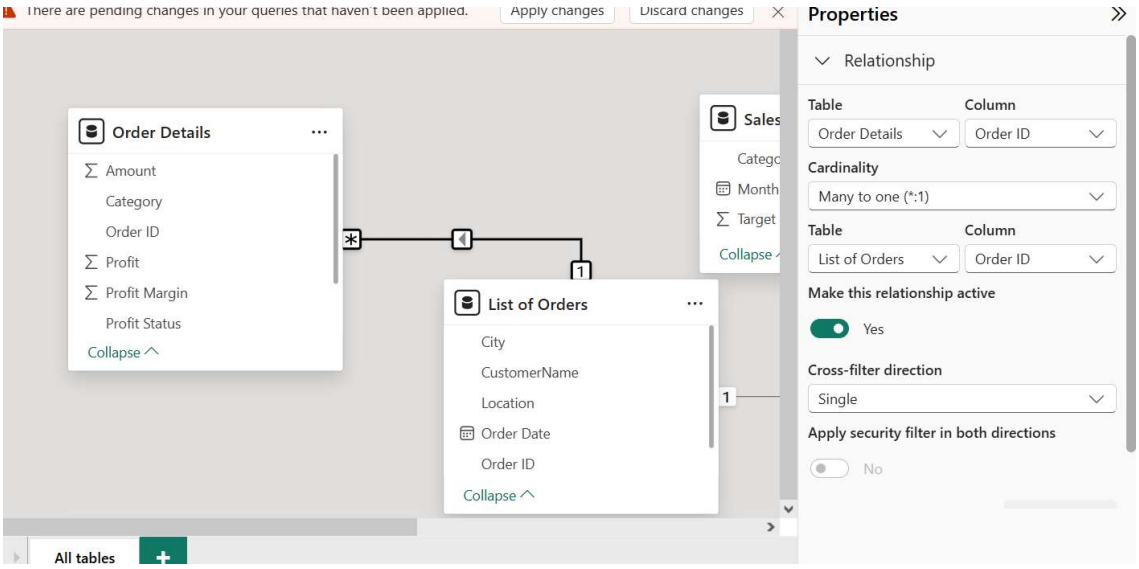
2.Duplicate the “Sales Target” table and aggregate the total target amount by Month of Order Date.



Data Modeling

1.Establish a relationship between the “List of Orders” and “Order Details” tables using

the ‘Order ID’ column.



2.Build a relationship between the “Order Details” and “Sales Target” tables based on the ‘Category’ column. Click "Manage relationships" and ensure this relationship is active.